Amendments to the Claims:

1. (Currently Amended) A method of transmitting a radio signal, the method comprising:

implementing a protocol stack having at least a physical layer and a medium access control layer, the medium access control layer directing data from an application to a plurality of transport channels, ~~the~~ in which the application data ~~belonging~~ belongs to ~~any of~~ a plurality of classes for which different qualities of service are required, and the transport channels to which the data is directed being selected in accordance with the ~~class~~ classes to which the data belongs~~,~~

~~processing each transport channel in accordance with;~~

generating a respective processing scheme ~~dependent~~ for processing data in each transport channel, in which components of the processing scheme are selected and combined in dependence upon the ~~nature of the~~ source application~~,~~ from which the data is directed; and

multiplexing the transport channels to produce a physical layer signal, wherein a code identifying each transport channel processing scheme is included in said physical layer signal.

2. (Previously Presented) A method according to claim 1, wherein said physical layer signal comprises a TDMA signal and said code is transmitted in predetermined locations.

3. (Original) A method according to claim 2, wherein said code is distributed across a plurality of bursts.

4. (Currently Amended) A radio transmitter comprising radio transmitting circuitry and processing means, the processing means being configured to implement a protocol stack having at least a physical layer and a medium access control layer for directing data from an application to a plurality of transport channels, ~~the~~ in which the application data ~~belonging~~ belongs to ~~any of~~ a plurality of classes for which different qualities of service are required, and wherein the transport channels to which the data is directed are arranged to be selected in accordance with the ~~class~~ plurality of classes to which the data belongs, and to be multiplexed to produce a physical layer signal, each transport channel arranged to be processed in accordance

with a processing scheme ~~dependent~~ for processing data in each transport channel, in which components of the processing scheme are arranged to be selected and combined in dependence upon the ~~nature of the~~ source application~~,~~ from which the data is directed;

wherein the processing means is configured to include a code identifying each transport channel processing scheme in said physical layer signal.

5. (Currently Amended) A radio transmitter according to claim 4, wherein said physical layer signal comprises a TDMA signal and said code ~~and said code~~ is transmitted in predetermined locations.

6. (Original) A radio transmitter according to claim 5, wherein said code is distributed across a plurality of bursts.

7. (Previously Presented) A MAC layer for use in the method of claim 1.

8. (Previously Presented) A physical layer for use with the MAC layer of claim 7.

9. (Previously Presented) A physical layer according to Claim 8, in which the processing schemes are specified at call set-up when the radio signal is for use in a mobile communications system.

Claims 10-13 (Cancelled)

14. (Previously Presented) A MAC layer implemented in the radio transmitter of claim 4.

15. (Previously Presented) A physical layer for use with the MAC layer of claim 14.

16. (Previously Presented) A physical layer according to claim 15, in which the processing schemes are arranged to be specified at call set-up when the radio signal is for use in a mobile communications system.

Claims 17-20 (Cancelled)

21. (Currently Amended) A method of transmitting a radio signal, the method comprising:

implementing a protocol stack having at least a physical layer and a medium access control layer, the medium access control layer directing data from an application to a plurality of transport channels, in which the application data ~~belonging~~ belongs to ~~any of~~ a plurality of classes for which different qualities of service are required, and the transport channels to which the data is directed being selected in accordance with the class to which the data belongs~~,~~; and

~~processing each transport channel in accordance with a~~ selecting and combining transport ~~format dependent~~ formats in dependence upon the ~~nature of the~~ source application~~,~~ from which the data is directed; and

multiplexing the transport channels to produce a physical layer signal, wherein a code identifying each transport channel transport format is included in said physical layer signal.

22. (Currently Amended) A method of transmitting a radio signal, the method comprising:

implementing a protocol stack having at least a physical layer and a medium access control layer, the medium access control layer directing data from an application to a plurality of transport channels, ~~the~~ in which the application data ~~belonging~~ belongs to ~~any of~~ a plurality of classes for which different qualities of service are required, and the transport channels to which the data is directed being selected in accordance with the class to which the data belongs~~, and~~

~~processing each transport channel in accordance with;~~

generating a respective processing scheme~~, and~~ for processing data in each transport channel;

multiplexing the transport channels to produce a physical layer signal, wherein a code identifying each transport channel processing scheme is included in said physical layer signal; and

selecting a modulation technique to be applied to the physical layer signal for transmission;

wherein the processing scheme is dependent on the modulation technique.

23. (New) A method of transmitting a radio signal, the method comprising:

implementing a protocol stack having at least a physical layer and a medium access control layer, the medium access control layer directing data from at least one application to a plurality of transport channels;

generating a respective processing scheme for processing data in each transport channel; and

multiplexing the transport channels to produce a physical layer signal, wherein a code identifying each transport channel processing scheme is included in said physical layer signal.